MOSPEC

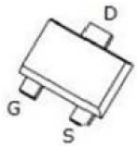
0Z75N20J

20V N-Channel Power MOSFET

DESCRIPTION：

- Excellent $R_{DS(ON)}$
- Low Gate Charge
- Advanced Trench Technology
- Pb-Free Lead Plating
- RoHS compliant

V_{DSS}	20V
I_D (T_A=25℃)	0.75A
$R_{DS(ON)\_Typ.}$@V_{GS}=4.5V	120mΩ



SOT-723

TYPICAL APPLICATIONS：

- Power Management
- Load Switch
- PWM Application

MAXIMUM RATINGS (at T_A = 25 °C, unless otherwise specified)

Characteristic	Condition	Symbol	Value	Unit
Drain-Source Voltage		V_{DSS}	20	V
Gate-Source Voltage		V_{GSS}	±10	V
Continuous Drain Current	T_A=25℃ T_A=100℃	I_D	0.75 0.5	A
Pulsed Drain Current		I_{DM}	3	A
Power dissipation	T_A=25℃	P_D	0.15	W
Junction & Storage temperature Range		T_J, T_{STG}	-55~+150	℃

THERMAL CHARACTERISTICS

Characteristic	Condition	Symbol	Value	Unit
Thermal resistance,	Junction to Ambient	$R_{\theta JA}$	833	℃/W

ELECTRICAL CHARATERISTICS (at T_J = 25 °C, unless otherwise specified)

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage VGS = 0V, ID = 250uA	$V_{(BR)DSS}$	20			V
Zero Gate Voltage Drain Current VDS = 20 V, VGS = 0 V	I_{DSS}			1	uA
Gate-Source Leakage Current VGS = ±10V, VDS = 0V	I_{GSS}			±10	uA
Gate-Source threshold voltage VDS = VGS, ID = 250uA	$V_{GS(th)}$	0.4	0.7	1.0	V
Drain-Source On-State Resistance VGS = 4.5V, ID = 0.5A VGS = 2.5V, ID = 0.4A	$R_{DS(on)}$		120 180	240 280	mΩ
Input capacitance f=1MHz, VDS=10 V, VGS=0 V	C_{iss}		60		pF
Output capacitance f=1MHz, VDS=10 V, VGS=0 V	C_{oss}		22		pF
Reverse transfer capacitance f=1MHz, VDS=10 V, VGS=0 V	C_{rss}		12		pF
Total Gate Charge VDS= 10V, ID= 0.75A,VGS= 4.5V	Q_G		1		nC
Gate to Source Charge VDS= 10V, ID= 0.75A,VGS= 4.5V	Q_{GS}		0.28		nC
Gate to Drain Charge VDS= 10V, ID= 0.75A,VGS= 4.5V	Q_{GD}		0.22		nC
Turn-on delay time VDS=10 V, VGS= 4.5V, ID= 0.5A, R_{GEN}=10Ω	$td_{(ON)}$		2		ns
Rise time VDS=10 V, VGS= 4.5V, ID= 0.5A, R_{GEN}=10Ω	tr		19		ns
Turn-off delay time VDS=10 V, VGS= 4.5V, ID= 0.5A, R_{GEN}=10Ω	$td_{(OFF)}$		10		ns
Fall time VDS=10 V, VGS= 4.5V, ID= 0.5A, R_{GEN}=10Ω	tf		23		ns

Body Diode

ELECTRICAL CHARATERISTICS (at T_J = 25 °C, unless otherwise specified)

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Diode Forward Voltage VGS = 0V, I_S = 0.75A	V_{SD}			1.2	V
Maximum Continuous Body Diode Forward Current	I_S			0.75	A
Maximum Pulsed Body Diode Forward Current	I_{SM}			3.0	A

Typical Performance Characteristics

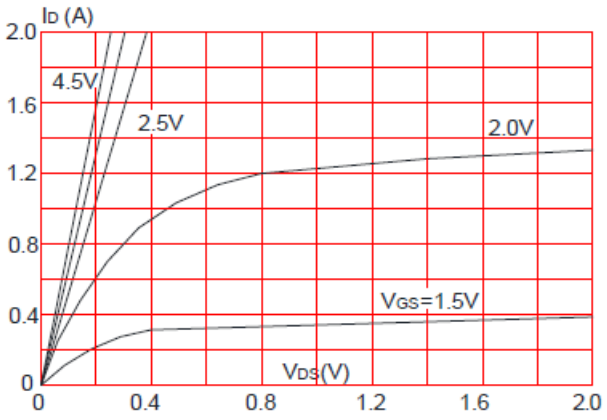


Figure 1. Output Characteristics

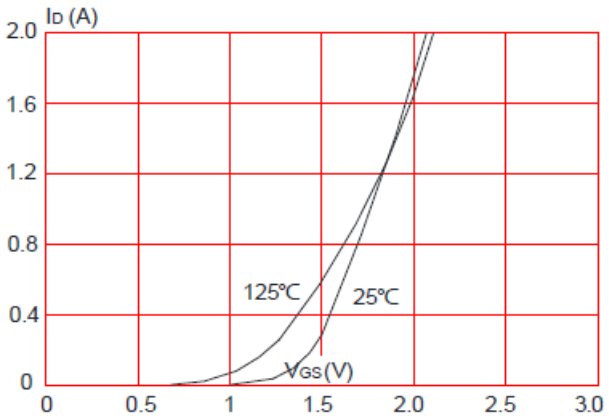


Figure 2. Typical Transfer Characteristics

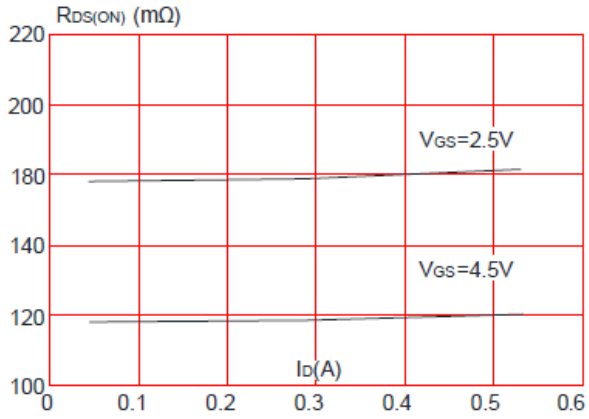


Figure 3. On-resistance vs. Drain Current

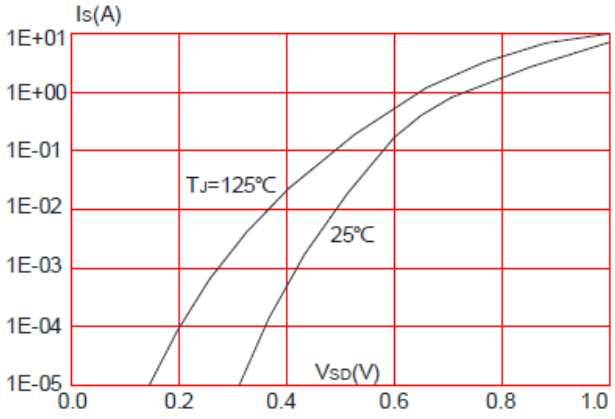


Figure 4. Body Diode Characteristics

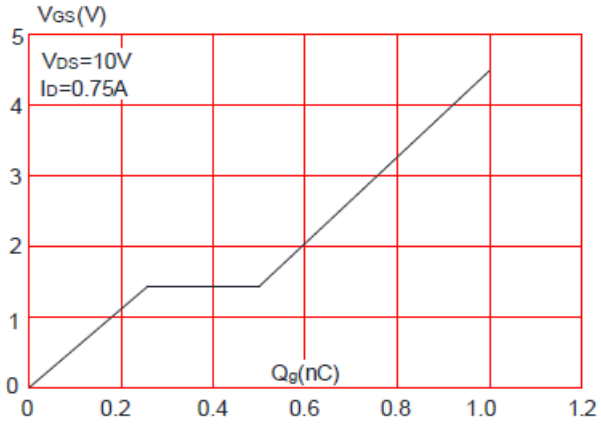


Figure 5. Gate Charge Characteristics

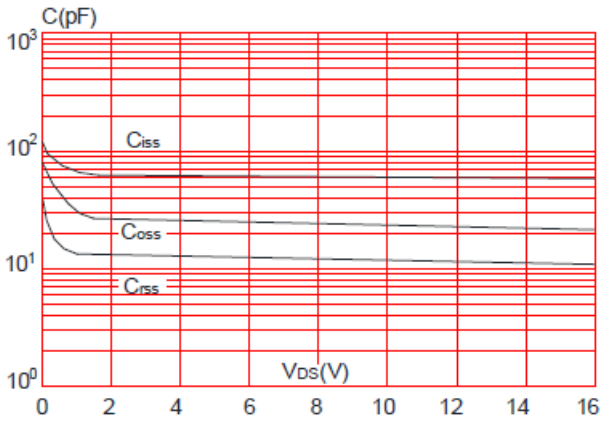


Figure 6. Capacitance Characteristics

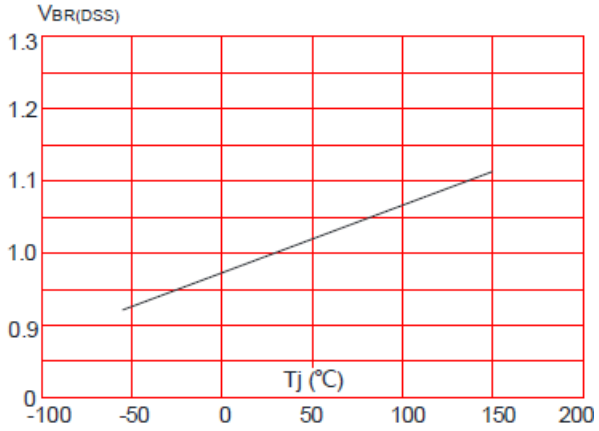


Figure 7. Normalized Breakdown voltage vs. Junction Temperature

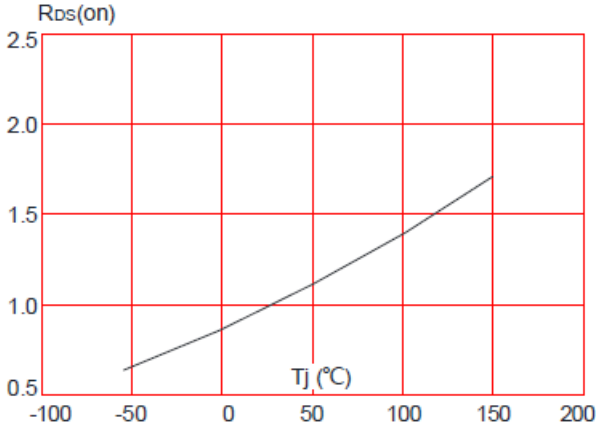


Figure 8. Normalized on Resistance vs. Junction Temperature

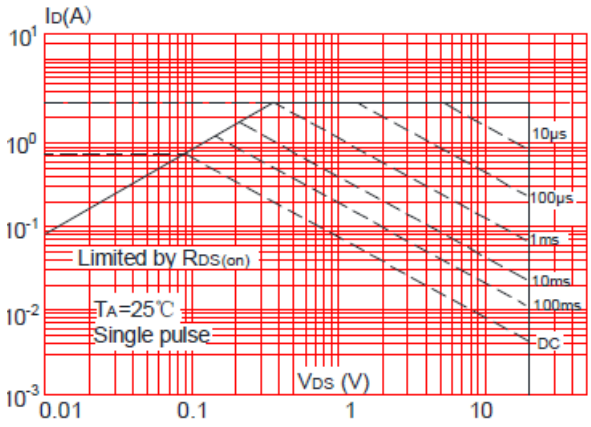


Figure 9. Maximum Safe Operating Area

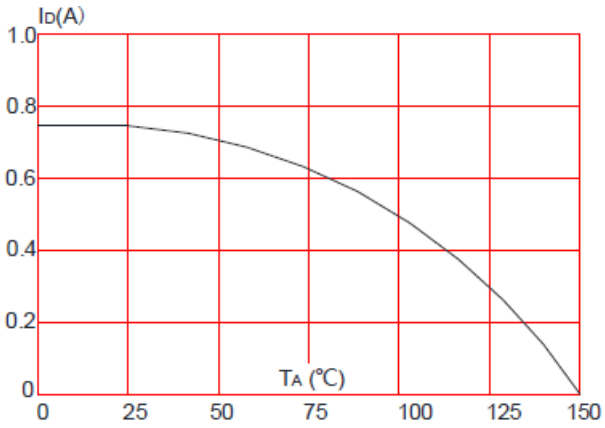


Figure 10. Maximum Continuous Drian Current vs. Case Temperature

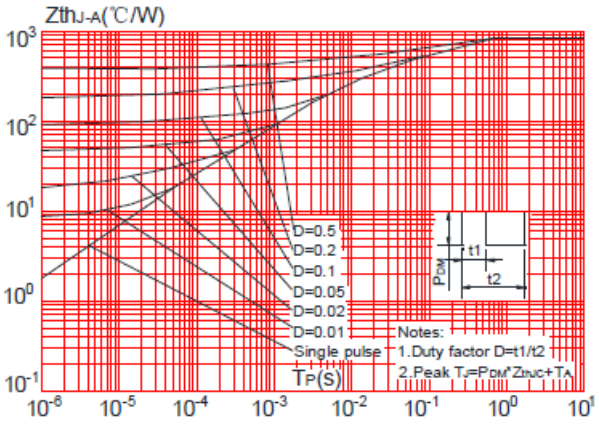
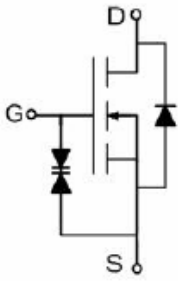
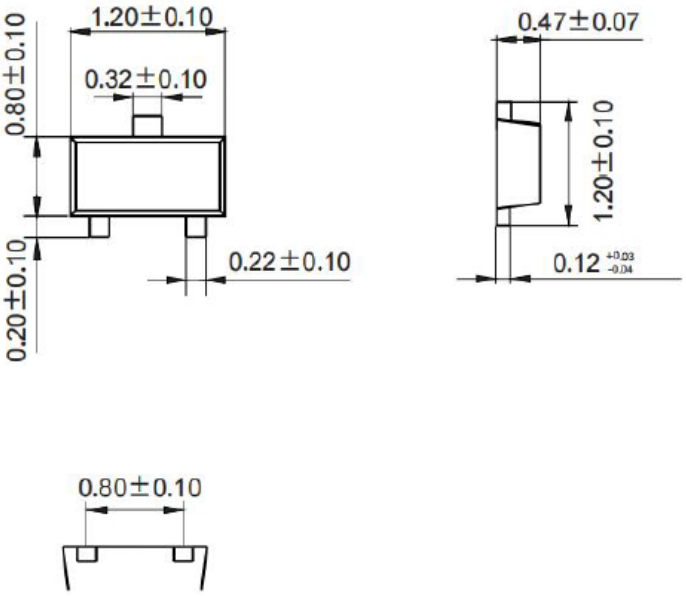


Figure 11. Maximum Effective Transient Thermal Impedance, Junction-to-Ambient

・Circuit diagram



・Package outlines :



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